

AMENDMENT UNDER 37 CFR § 1.111
Serial No. 09/349,087

REMARKS

A total of 28 claims remain in the present application. The foregoing amendments are presented in response to the Office Action mailed July 2, 2003, wherefore reconsideration of this application is requested.

By way of the above-noted amendments, the claims have been amended to more clearly defined features of the present invention.

In preparing the above-noted amendments, careful attention was paid to ensure that no new subject matter has been introduced.

Referring now to the text of the Office Action:

- a) claims 8 and 13-17 have been rejected under 35 USC § 112, second paragraph as being indefinite;
- b) claims 1-4 stand rejected under 35 USC § 103(a) as being unpatentable over United States Patent No. 6,047,005 (Sherman et al.);
- c) claims 5,21-24,26, 27 and 28 stand rejected under 35 USC § 103(a) as being unpatentable over United States Patent No. 6,047,005 (Sherman et al.) in view of United States Patent No. 5,263,056 (Urbansky);
- d) claims 5-10 stand rejected under 35 USC § 103(a) as being unpatentable over United States Patent No. 6,047,005 (Sherman et al.) in view of United States Patent No. 5,263,056 (Urbansky), and further in view of United States Patent No. 4,998,242 (Upp);

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- e) claim 12 stand rejected under 35 USC § 103(a) as being unpatentable over United States Patent No. 6,047,005 (Sherman et al.) in view of United States Patent No. 6,240,087 (Cummings et al.);
- f) claims 13, 16, 17, 19 and 20 stand rejected under 35 USC § 103(a) as being unpatentable over United States Patent No. 6,047,005 (Sherman et al.) in view of United States Patent No. 4,998,242 (Upp);
- g) claims 14 and 15 stand rejected under 35 USC § 103(a) as being unpatentable over United States Patent No. 6,047,005 (Sherman et al.) in view of United States Patent No. 4,998,242 (Upp), and further in view of United States Patent No. 5,131,013 (Choi);
- h) claim 18 stand rejected under 35 USC § 103(a) as being unpatentable over United States Patent No. 6,047,005 (Sherman et al.) in view of United States Patent No. 4,998,242 (Upp), and further in view of United States Patent No. 5,663,820 (Shiragaki); and
- i) claims 11 and 25 are objected to as being dependent on a rejected base claim.

As an initial matter, applicant appreciated the Examiner's indication of patentable subject matter in claims 11 and 25. The Examiner's rejections of the remaining claims is believe to be traversed by the above-noted amendments in the claims, and further in view of the following comments.

Rejections under 35 USC § 112

With reference to claim 8, "remainder fixed stuff bits" are described in the specification at page 8, lines lines 8-17. Thus

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"A block 10-j is defined herein as a 1056-bit field, which comprises data bits, fixed stuff bits and adaptive stuff bits, as it will be seen later. An STS-192 SPE can accommodate 1138 such blocks 10-1 to 10-K (where K=1138), that occupy the area shown in grey and designated by reference numeral 8. Block field 8 has 1,201,728 bits. The remaining 960 bits in the envelope 4 are comprised by the POH bits 6 ($9 \times 8 = 72$ bits) and a remainder field 14 of 888 bits. The number of the bits in fields 6 and 14, is unchanged, irrespective of the rate R1 of the continuous format signal mapped into the SONET frame 1. Therefore, these bits are called in the following fixed stuff bits." (underlining added)

It is respectfully submitted that, based on this teaching, the skilled artisan would understand that the claimed "remainder fixed stuff bits" refer the fixed stuff bits inserted into the remainder field 14.

Claim 13 has been amended to remove reference to a "transparent tributary". Similarly, claim 17 has been amended to remove reference to "re-arranging".

In light of the foregoing, it is believed that the Examiners objections under 35 USC § 112 have been fully addressed.

Rejections under 35 USC § 103(a)

As mentioned by the Examiner at page 14 of the Office Action, "Sherman et al is directed toward solving the problem of wasted bandwidth due to under utilization of outbound T1 circuits of a voice response unit (see columns 1 and 2) and is not directed toward solving the problems of the present invention, namely mapping of an arbitrary rate signal." As such, transport of T1 signaling over VT1.5 over OC-3, is presented by Sherman et al as a well known signal mapping that permits transport of lower rate signaling over a synchronous network. Many such mappings are well known, and predate the Sherman et al reference. Typically, these mappings involve the insertion of stuff bits (or words) to compensate differences between

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the data rates of the customer's data signal and the synchronous transport signal. As is well known in the art, stuff bits (or words) are preferably evenly distributed within the transport frame, so as to minimize the effects of jitter.

As is also well known in the art, and described in the present application, such prior art mappings must be provisioned in advance, with in-depth knowledge of the traffic to be conveyed through the synchronous network. Frequently, separate hardware must be provided for each mapping. Thus, for example, the T1 over VT1.5 over OC-3 mapping used by Sherman et al would be implemented using a specially designed application-specific integrated circuit (ASIC). A difference mapping (e.g. T1 over VT2 over OC-4) would require an entirely different ASIC.

However, as pointed out in the present application, advanced knowledge of a customer's service and/or bit-rate may not be available at the time that a connection is provisioned. Thus the present invention provides an "adaptive mapping algorithm", that enables the mapping function to be rapidly provisioned "on the fly" (page 6 line 5). This is accomplished by adaptively mapping the data to the frame, using both fixed stuffs and adaptive stuff bits. The number and location of the adaptive stuff bits is computed based on the relationship between the (customer's) continuous format signal and the fixed length container used for transport across the synchronous network.

None of the cited references, taken alone or in combination, teach or suggest adaptive mapping of arbitrary rate signals onto a synchronous signal. Accordingly, it is respectfully submitted that the presently claimed invention is clearly distinguishable over the teaching of the cited references, taken alone or in any combination. Thus it is believed that the present application is in condition for allowance, and early action in that respect is courteously solicited.

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If any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,



By: Kent Daniels
Reg. No. 44,206
Attorney for the Applicants

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Ogilvy Renault
Suite 1600
1981 McGill College Avenue
Montreal, Quebec
Canada, H3A 2Y3
(613) 780 8673